

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A computer implemented modeling process comprising:
 - providing a plurality of blocks, each of the blocks representing functional entities;
 - generating a plurality of output signals from the plurality of blocks, each output signal having at least one attribute;
 - grouping the plurality of output signals as an ordered set in a multiplexer as a first composite signal;
 - outputting the first composite signal, the first composite signal preserving the at least one attribute of each output signal; ~~and~~
 - storing the first composite signal in a storage device; and
 - decomposing the first composite signal into the plurality of output signals.
2. (Previously Presented) The process of claim 1 wherein each of the blocks includes at least one output signal port.
3. (Canceled)
4. (Previously Presented) The process of claim 1 wherein the attribute is a name.
5. (Previously Presented) The process of claim 1 wherein the attribute is a data type.
6. (Previously Presented) The process of claim 1 wherein the attribute is a numeric type.
7. (Previously Presented) The process of claim 1 wherein the attribute is a dimensionality.
8. (Original) The process of claim 1 wherein the ordered set is a linked list data structure.
9. (Previously Presented) The process of claim 8 wherein the linked list data structure is a tree data structure, the tree data structure including $m + n$ nodes, wherein m represents a number of independent signals and n represents a number of composite signals.

10. (Canceled)
11. (Currently Amended) The process of claim 1 further comprising:
| ~~using a demultiplexer to decomposing~~ the first composite signal into the
| plurality of output signals ~~in a demultiplexer~~.
12. (Original) The process of claim 1 further comprising viewing the ordered set contained in the first composite signal with a composite signal viewer.
13. (Previously Presented) The process of claim 1 wherein at least one of the output signals is a second composite signal.
14. (Currently Amended) A computer implemented block diagram modeling process comprising:
| providing a first block and a second block, the blocks representing functional entities;
| generating a plurality of output signals from the first and second block, each output signal having at least one attribute;
| grouping the plurality of output signals as an ordered set in a multiplexer as a first composite signal, the first composite signal preserving the at least one attribute of each output signal;
| processing the composite signal in a third block; ~~and~~
| storing the composite signal in a storage device; ~~and~~
| ~~decomposing the composite signal into the plurality of output signals.~~
15. (Original) The process of claim 14 wherein the ordered set is a linked list data structure.
16. (Previously Presented) The process of claim 14 wherein an output signal is a second composite signal.
17. (Canceled)

18. (Original) The process of claim 14 further comprising viewing the composite signal in a composite signal viewer.
19. (Original) The process of claim 18 wherein the composite signal viewer displays the ordered set contained in the composite signal on a graphical user interface (GUI).
20. (Original) The process of claim 19 wherein the GUI is provided on an input/output device.
21. (Currently Amended) A computer program product residing on a computer readable medium having instructions stored thereon which, when executed by the processor, cause the processor to:
 - provide a plurality of blocks, each of the blocks representing functional entities;
 - generate a plurality of output signals from the plurality of blocks, each output signal having at least one attribute;
 - group the plurality of output signals as an ordered set in a multiplexer as a first composite signal, the first composite signal preserving the at least one attribute of each output signal;
 - output the first composite signal;~~and~~
 - store the first composite signal in a storage device; and
 - decompose the first composite signal into the plurality of output signals.
22. (Original) The computer program product of claim 21 wherein the computer readable medium is a random access memory (RAM).
23. (Original) The computer program product of claim 21 wherein the computer readable medium is read only memory (ROM).
24. (Original) The computer program product of claim 21 wherein the computer readable medium is hard disk drive.
25. (Currently Amended) A processor and a memory configured to:

provide a plurality of blocks, each of the blocks representing functional entities;
generate a plurality of output signals from the plurality of blocks, each output signal having at least one attribute;

group the plurality of output signal values as an ordered set in a multiplexer as a first composite signal, the first composite signal preserving the at least one attribute of each output signal;

output the first composite signal; ~~and~~

store the first composite signal in a storage device; ~~and~~

decompose the first composite signal into the plurality of output signals.

26. (Original) The processor and memory of claim 25 wherein the processor and the memory are incorporated into a personal computer.
27. (Original) The processor and memory of claim 25 wherein the processor and the memory are incorporated into a network server residing in the Internet.
28. (Original) The processor and memory of claim 25 wherein the processor and the memory are incorporated into a single board computer.
29. (Currently Amended) A computer implemented modeling process comprising:
 - providing a plurality of blocks, each of the blocks representing a functional entity that generates one or more output signals, each output signal having at least one attribute;
 - grouping the output signals as an ordered set in a multiplexer as a composite signal, the composite signal preserving the at least one attribute of each output signal;
 - outputting the composite signal; ~~and~~
 - storing the composite signal in a storage device; ~~and~~
 - decompose the composite signal into the one or more output signals.
30. (Original) The process of claim 29 wherein the ordered set is a tree data structure.
31. (Original) The process of claim 30 wherein the tree data structure is a linked list.

32. (Original) The process of claim 29 further comprising:
providing a composite signal viewer; and
viewing the ordered set in a graphical user interface executing in the composite signal viewer.
33. (Currently Amended) A computer program product residing on a computer readable medium having instructions stored thereon which, when executed by the processor, cause the processor to:
provide a plurality of blocks, each of the blocks representing a functional entity that generates one or more output signal values, each output signal having at least one attribute;
group the output signals as an ordered set in a multiplexer as a composite signal, the composite signal preserving the at least one attribute of each output signal;
output the composite signal; ~~and~~
store the composite signal in a storage device; ~~and~~
decompose the composite signal into the one or more output signals.
34. (Currently Amended) A processor and memory configured to
provide a plurality of blocks, each of the blocks representing a functional entity that generates one or more output signals, each output signal having at least one attribute;
group the output signals as an ordered set in a multiplexer as a composite signal, the composite signal preserving the at least one attribute of each output signal;
output the composite signal; ~~and~~
store the composite signal in a storage device; ~~and~~
decompose the composite signal into the one or more output signals.
35. (Currently Amended) A method for providing a composite signal in a modeling environment, the method comprising the steps of:
providing a plurality of output signals from one or more blocks, each output signal having at least one attribute;
generating a composite signal comprising a set of the plurality of output signals, the composite signal preserving the at least one attribute of each output signal;

outputting the composite signal; ~~and~~
storing the composite signal in a storage device; ~~and~~
~~decomposing the composite signal into the plurality of output signals.~~

36. (Currently Amended) A method for graphically representing a composite signal in a modeling environment, the method comprising the steps of :

providing a plurality of output signals from one or more blocks, each output signal graphically indicated by a signal identifier, each output signal having at least one attribute;

providing a composite signal identifier to graphically indicate a grouping of signal identifiers, the composite signal identifier representing a composite signal comprising a set of the plurality of output signals, the composite signal preserving the at least one attribute of each output signal; ~~and~~

storing the composite signal identifier in a storage device; ~~and~~
~~decomposing the composite signal into the plurality of output signals.~~

37. (Previously Presented) The process of claim 1, further comprising:

representing a non-composite signal with a first graphical element, and

representing the composite signal with a second graphical element, wherein the second graphical element is visually different than the first graphical element.